Author: Devendra , OISD



Shri Devendra Mahajan,
Joint Director (P&E)
Oil Industry Safety Directorate

Basically a chemical Engineer from Laxminarayan Institute of Technology (LIT), Nagpur having 20 years of experience in Insurance, Operations, Technology, Commissioning, HAZOP, SIL and safe shutdown management.

He has worked as lead for two years on SEED project (Safety Improvement Initiative) at IOCL, with DUPONT .

Presently, He is working with Oil Industry Safety Directorate(OISD) as Joint Director, Process and Engineering. His wide area of knowledge comprises of Safety Management System including Process Safety Management (PSM), Incident Investigation & Analysis, Safety Audit etc.

He is a Certified Lead Auditor for ISO-45001, BEE certified Energy Auditor.

You are witnessing success of his innovative ideas in the form of Suraksha Samwad. He has carried out many major process incident investigations across the country, published various case studies, Lesson learnt.

He has been a frequent guest speaker on national/ International seminars and conferences on Process safety.

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Procedure
for
Onsite Incident Reporting
and
Investigation

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and Share

Are we not doing the reverse….

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Learning from our own mistake -Experience

Learning from other's mistake -Wisdom

Making same mistake again.....-Offence

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Procedure
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and
Investigation

Why and what's new…

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REQUIREMENT

- Changes in DMP
- Standardization
- Scope of Improvement

Standardization of criteria, procedure and modalities for **incident investigation** and effective dissemination of learnings



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Defining the terms

TERMINOLOGY

Disaster: "Disaster" means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area." (Reference: Section 2 (d) of DMP Act 2005).

Minor incident: Any incident not falling under any of the categories of major incident.

Near miss: Any incident which does not result in any injury or damage to property but has the potential to result in injury and/or property damage. An undesirable event, if not timely controlled, would have led to a major/ minor incident.

Hi-Po (High Potential) Near miss: The near miss that could in other circumstances, have realistically resulted in one or more fatalities.

TERMINOLOGY

Unsafe act: Unsafe act is any act that deviates from a generally recognized safe way or specified method of doing a job and which increases the probabilities of an incident.

Unsafe condition: Any condition or situation (electrical, chemical, biological, physical, mechanical and/or environmental) which increases the **risks and dangers of incident** can be called as unsafe condition.

First Information Report (FIR): Preliminary incident report submitted by industry to OISD in prescribed format .

Nodal officer: Departmental officer nominated by Sectional Head for incident data management.

Case Study: Detailed lesson learnt from the incident investigation report of the incident which are investigated by OISD

Safety Alert: Lesson learnt from the incident investigation report of the incident which are not investigated by OISD. This will be based on the internal investigation report submitted by Industry

TERMINOLOGY

Major Incident: An incident shall be treated as Major if any of the following occurs (Reference: Appendix 'A, Disaster Management Plan (DMP) 2021, Government of India Ministry of Petroleum & Natural Gas, revised in September 2021):

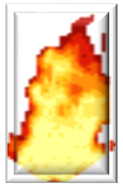
- Any incident of **fire not extinguished in 15 minutes**.
- Any incident on account of **explosion/ blowout/ radioactive (leakage or loss).**
- Any incident causing **shutdown of operation(s) for more than eight hours.**
- Any incident **causing financial loss above Rs. 50 lakhs.**
- Any incident within unit/ installation premises **leading to fatality(s).**
- Any incident within unit/ installation premises, **leading to permanent loss of body part and/ or permanent disability.**
- Any incident **causing major loss of containment** and having **adverse impact outside the plant/ location premises** including disaster defined under Section 2 (d) of DMP Act 2005.
- **Cumulative lost time**, due to incident (within unit/ installation premises) is more than **45 man-days**.
- Any **incident of road accidents** (during transportation of petroleum products) resulting in fire/
- explosions which in turn **leads to fatality(s)**.

Additionally, any incident not covered above but which **gets reported in the National media within 24 hours** of the occurrence shall also be reported.

Note: a) Unit/ installation premises also includes, area under control of Occupier/ Mines Manager, project sites (including grass root), pipeline RoU (for incident related to pipeline), Rig under transport etc.b) Petroleum product also includes crude, hydrogen, natural gas (CNG, LNG etc.), and petrochemicals

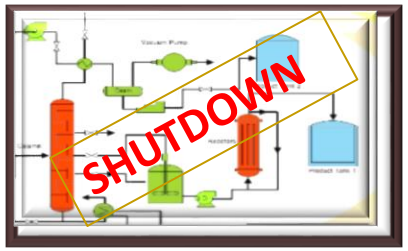
MAJOR INCIDENT

Major Incident: An incident shall be treated as Major if any of the following occurs



Any incident of **fire not extinguished in 15 minutes**.





Any incident causing shutdown of operations on account of fire / explosion / blowout / leakage.

- **Any incident on account of explosion/ blowout/ radioactive (leakage or loss).**
- Any incident causing **shutdown of operation(s) for more than eight hours.**



Any incident leading to fatality(s) within plant / location premises

- Any incident within unit/ installation premises **leading to fatality(s).**

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	Any incident causing financial loss above Rs. 20 lakhs.	Any incident causing financial loss above Rs. 50 lakhs.
	Any incident leading to permanent loss of body part and / or permanent disability **within plant / location** premises.	Any incident **within** unit/ installation premises, **leading to permanent loss of body part and/ or permanent disability.**
	Any incident **causing major loss of containment** and having **adverse impact outside the plant/ location premises** including disaster defined under Section 2 (d) of DMP Act 2005.	
	Cumulative man-hours lost, within plant / location premises, is more than **500 hrs.**	**Cumulative lost time**, due to incident (within unit/ installation premises) is more than **45 man-days.**
	Additionally, any incident not covered above but which gets reported in the **National media within 24 hours of the occurrence** shall also be reported.	

TERMINOLOGY

<u>Lost Time (Man-days)</u>: **The total number of days for which the injured person (including contract workmen) was temporarily disabled till he/ she resumes duty/ certified fit by qualified medical practitioner**. The day on which the injury occurred or the day the injured person returned to work are not to be included. However, all intervening calendar days (including Sundays or days off or days of unit/ installation shut down) are to be included. If after resumption of work, the person injured is again disabled for any period arising out of the injury which caused his/ her earlier disablement, the period of such subsequent disablement is also to be included in the lost time.

Lost time accident shall be monitored till the injured person joins duty. In case the injured person is yet to join the duty, then the status of report submitted will be preliminary. Final report against the same incident shall be sent once the person joins duty and the man-days lost is known. (Reference: IS-3786 and OSHA 29 CFR Part 1904 section 1904.7(b) (3)(ii) and (iii))

In case the injured person has been transferred to any other job (other than one, he was performing on the day of incident) and/ or removed from the job, the lost time man-days should be counted till **he/ she is certified fit by qualified medical practitioner or 180 man-days whichever is minimum.**

Cumulative Lost Time (Man-days)

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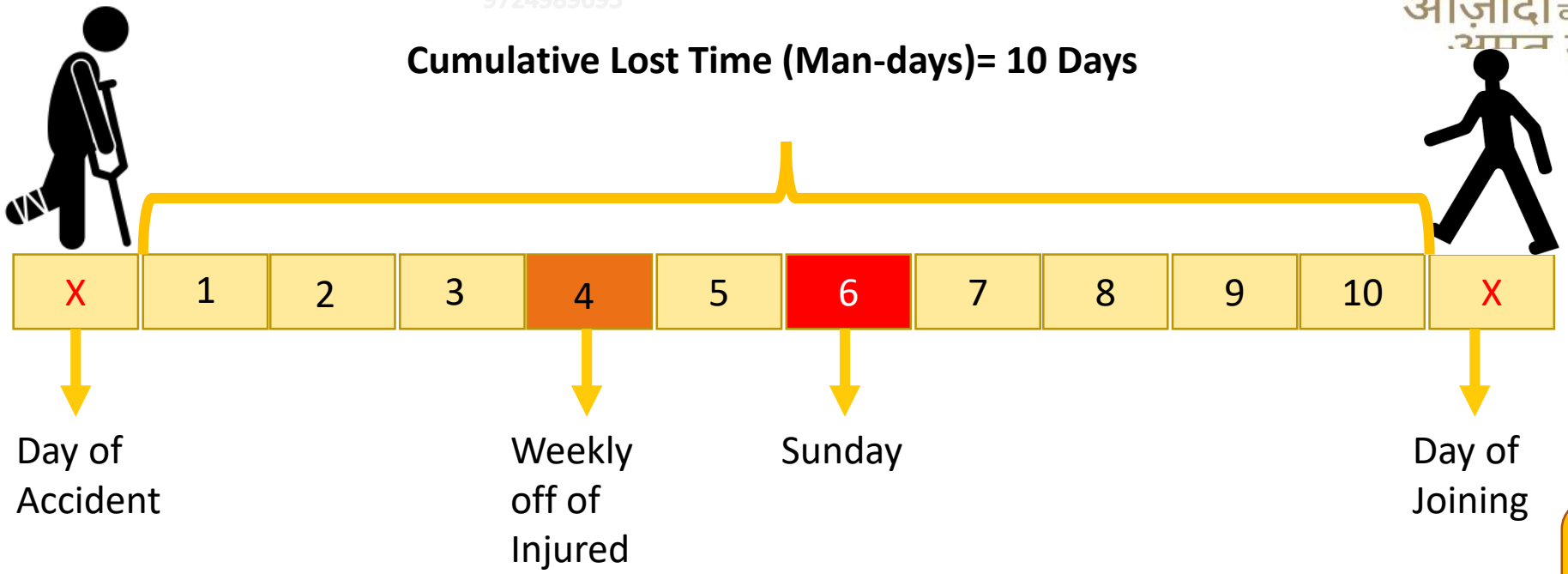
CASE-I

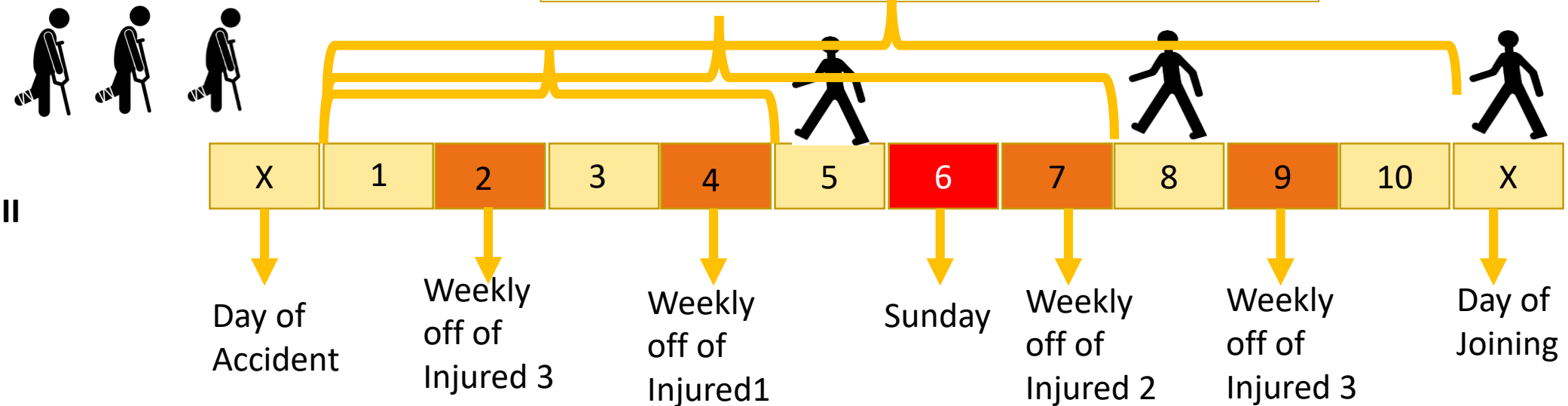
Cumulative Lost Time (Man-days)= 10 Days



Max 180 per person

CASE-II

Cumulative Lost Time (Man-days)=4+7+10=21



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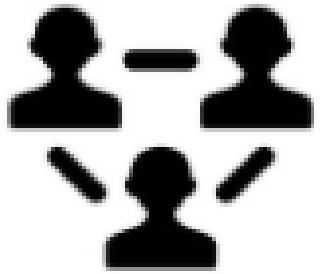

Reporting Criteria

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CRITERIA FOR REPORTING INCIDENT TO OISD

- **All major incident**
- All incidents in offshore oil & gas facility as per the **sub rules 1, 2 and 3 of rule 11** of Petroleum and Natural Gas (Safety in Offshore Operations) Rules, 2008
- **HSE related incidents** reported to any Ministry and/ or any of the statutory bodies (PESO, DGMS, DISH (Factory Inspectorate), ICG, CPCB/ SPCB, Inspectorate of Factories and Boilers, PNGRB etc.) shall also be forwarded to OISD **in the format as submitted to these authorities.**

Note: Incident reported against **sub rules 1, 2 and 3 of rule 11** and **HSE related incidents** shall be evaluated against criterion of major incident at OISD and if required classified accordingly.

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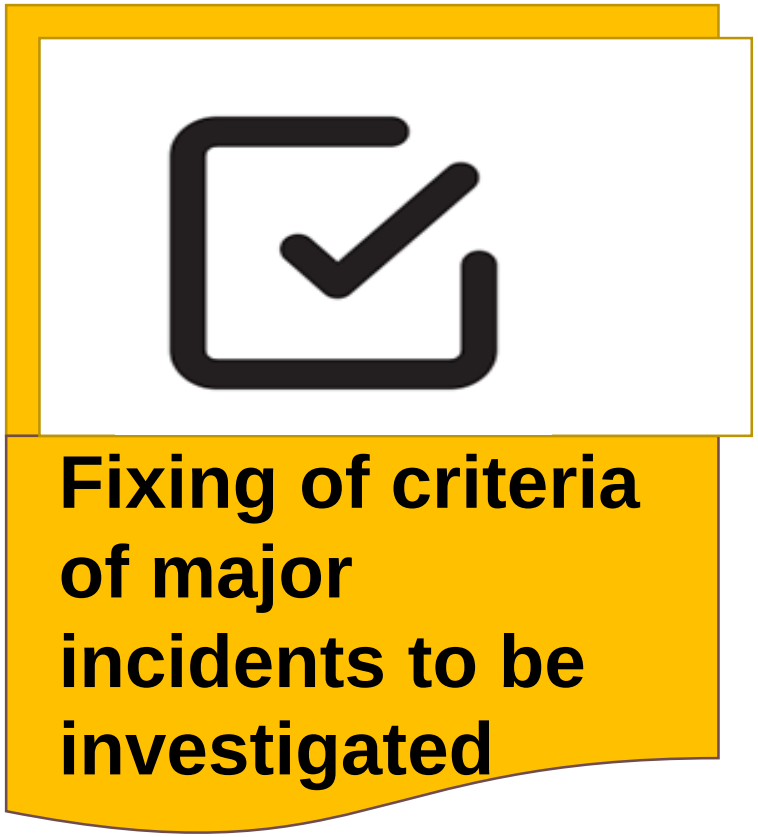

CRITERIA OF MAJOR INCIDENT TO BE INVESTIGATED BY COMPANY CONCERNED/ OISD/ JOINTLY

1. All major onsite incident **should be mandatorily investigated by the Company concerned**. Internal Investigation Report (IIR) of such investigation should be submitted by industry within **one month from the date of incident**. Regular follow-up by the concerned nodal officer of the section to be done and documented.
2. ED-OISD shall decide the investigation requirement based on:
   - **severity/ nature of incident on case-to-case basis**
   - **If IIR found inadequate**
3. Based on any directive/ instruction from **Government/ other relevant authorities**.

- Note: Based on the perusal of IIR (if found inadequate), follow-up or site visit can be planned by Section Head, with approval of ED-OISD, for further investigation.

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Review of incident data

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INTERNAL INVESTIGATION REPORT



REVIEWED AT OISD

Inadequate



Inadequate

ED-OISD



Team Formation

Adequate

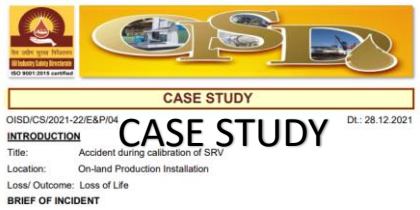


Adequate

Dissemination- LFI



SAFETY ALERT



CASE STUDY

REPORTING AND EVALUATION OF MINOR INCIDENT/ NEAR MISSES/ UNSAFE ACTS & CONDITIONS

1. Quarterly incident report containing details of the following to be submitted to OISD **within 45 days from the end of the quarter** .
   - Number of unsafe act, unsafe conditions, near miss, injuries, minor, major incidents
   - Number of accidents reported against sub rule 1 and 3 of rule 11 of PNG Rule 2008, for offshore installations,
   - Lost Man days, million-man hour worked
   - Number of HSE related incidents
2. Details of minor incident and High Potential near miss (as decided by industry/ asked by OISD) to be provided along with quarterly summary report in the Incident Reporting Format.

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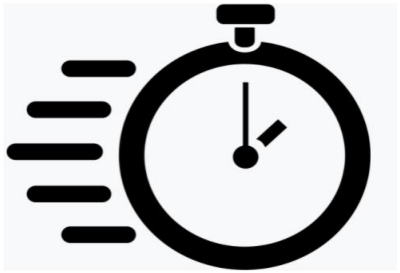

Deciding the timelines

TIMELINES

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Activity	Timeline	By whom
First Information Report (FIR)	At the earliest through electronics means and telephone and in FIR format within 24 hrs. from the time of incident	Company concerned
Information to MoP&NG	Within 24 hrs. from receipt of FIR/communication	OISD
Incident Investigation by Company concerned (Mandatory)		
Submission of IIR	Within one month from the date of incident	Company concerned
Submission of Quarterly Incident Report	Within 45 days from the end of the quarter	Company concerned
Incident Investigation by OISD (Based on criteria)		
Team Formation	At the earliest	OISD
Director's review (Draft report)	One month (from D.O. team formation)	II Team
Final report	8 weeks (Max)	II Team/ OISD
Dissemination of learnings		
Case Study/safety alert of the incident	15 Days (from D.O. report)	OISD

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Standardization of Causes

STANDARDIZATION OF CAUSE(S) OF INCIDENT

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- Violation of Work Permit System
- Pilferage/ miscreant activities
- Inadequate hazard identification or risk assessment
- Inadequate work standards/ procedures/ disregard of SOP
- Inadequate competence
- Inadequate supervision



- Design deficiency
- Noncompliance of Management of Change
- Poor maintenance & Inspection
- Negligent driving, Road Accidents, Crane/ Hydra accidents etc.
- Inadequate/ defective warning systems/ safety devices
- Non-compliance to PPE/ fall & slip
- Equipment failure
- Others

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(पेट्रोलियम एवं प्राकृतिक गैस मंत्रालय के अंतर्गत) (Under Ministry of Petroleum and Natural Gas)

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- PCSA
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- Incident Reporting Guidelines

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Wear Your Mask Properly



Wash Your Hands Regularly



Maintain Social Distancing



भारत सर
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OISD's Area of Work
Major Activities

From The Desk of Executive Director
Message from Executive Director, OISD

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Incidents - Quarterly Summary Report

Quarter: 1st/ 2nd/ 3rd/ 4th				Financial Year :		
Organization/ Location			Sector (Ref./ Gas Proc./ Mktg./ Pipelines/ E&P			
Nature	Fire/ Accident	1st Qtr. Apr. - Jun	2nd Qtr. Jul- Sep	3rd Qtr. Oct - Dec	4th Qtr. Jan - Mar	TOTAL
Major	Fire					
	Accident					
	Total					
Accidents against sub rule 1 of rule 11 of PNG Rule 2008 for offshore installations	Total					
Accidents against sub rule 3 of rule 11 of PNG Rule 2008 for offshore installations	Total					
Minor	Fire					
	Accident					
	Total					
Near miss	Total					
Hi-Po Near miss	Total					
Unsafe Act	Total					
Unsafe condition	Total					
Fatality(s)	Employee					
	Contract					
	Others					
	Total					
Injury(s)	Employee					
	Contract					
	Others					
	Total					
Cumulative man hour worked in the quarter (million man hour).						
Total lost time (Man-days) (refer point nos. 6, 7and 8 of the guidelines below)						

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FIR of Major Incident

1. Name of Reporting Organization		2. Sector		Refinery			
		Gas Processing		Pipeline			
		MKTG POL		E&P			
		MKTG LPG		Others			
3. Location							
4. Date of Incident		5. Time of Incident					
6. Fire/ Accident		7. Duration of fire –hrs./ min					
8. Whether unit/ installation shutdown/ caused outage of the facility?		Yes		No			
9. Reason for categorizations Major incident (Tick one or more from the factors mentioned b							
a.	Any incident of fire not extinguished in 15 minutes.						
b.	Any incident on account of	explosion		blowout		radioactive (leakage or loss)	
c.	Any incident causing shutdown of operation(s) for more than eight hours.						
d.	Any incident causing financial loss above Rs. 50 lakhs						
e.	Any incident within unit/ installation premises leading to fatality(s).						
f.	Any incident within unit/ installation premises, leading to permanent loss of body part and/ or permanent disability						
g.	Any incident causing major loss of containment and having adverse impact outside the plant/ location premises including disaster defined under Section 2 (d) of DMP Act 2005.						
h.	Cumulative lost time, due to incident (within unit/ installation premises) is more than 45 man-days.						
i.	Any incident of road accidents (during transportation of petroleum products) resulting in fire/ explosions which in turn leads to fatality(s).						
10.	Any incident not covered above but which gets reported in the National media within 24 hours of the occurrence shall also be reported.						
11. Fatality(s) (in Nos.)	a) Employee		b) Contract Personnel		c) Others		
12. Injury(s) (in Nos.)	a) Employee		b) Contract Personnel		c) Others		

13. Brief description of the incident including post incident measures, (if any)	
Signature	

/ Ref / PL /
/ Mktg POL /

nt

e - Hrs / Min

c) Others
=

e of the attachment

<signature>
ation, Co., Location>
<Date>

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1Organisation	
3. Location	
5. Date of Incident	
7. Major / Minor / Nearmiss	
9. Fire / Accident	
11. Type of Incident with loss of life Inhalation of Gas, Driving, Slip / Trip	
12. Location of Incident (Name of F etc)	
13. Whether plant shutdown / cause	
14. Fatalities nos.	a) Empl
15. Injuries nos.	a) Empl
16. Man - hours Lost	a) Empl
17. Direct Loss due to the incident (etc.	
18. Indirect Losses : Through put / F	
19. Status of the Facility: Constructi Maintenance / Start up / Any other.	
20. Brief Description of the Incident measures. (Attach details in separate sheet)	
21. Whether similar Incident has occ	

INCIDENT REPORTING FORM

Organization						
Location						
Type (Tick the box)	Major		Minor		Hi-Po Near miss	
Provide the numbers	Fatality		Injury		Man hour lost	
Date dd.mm.yyyy			Direct loss due to the incident (Rs. In Lac)			
Time hh:mm			Whether internal investigation done?			
Incident details with site details						
Root cause						
Recommendations						

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Oil Industry Safety Directorate

Thanks….